<center>**REMARKS/ARGUMENTS**</center>

Claims 1-3, 5, 9-12, and 37 are pending in the present application. Claims 4, 6-8, 13-36, and 38-39 are canceled. Claim 1 is amended for further clarification. Applicants are not conceding in this application that the subject matter removed from amended claims and/or in the canceled claims are not patentable over the art cited by the Examiner. The present claim amendments and cancellations are only for facilitating expeditious prosecution in the application. Applicants respectfully reserve the right to pursue these and other claims in one or more continuations and/or divisional patent applications. Support for the amendments to claim 1 is located at least in the previous draft of the claims and in the specification on page 5, lines 19-26; on page 10, line 21, through page 11, line 8; on page 24, line 27, through page 25, line 1; on page 29, lines 12-28. Reconsideration of the claims is respectfully requested.

I. 35 U.S.C. § 103, Obviousness

The Examiner has rejected claims 1-3, 5-6, 9-15, 17-18, 21-27, 29-30, and 33-36 under 35 U.S.C. § 103(a) as being unpatentable over *Du et al.*, (US Patent No. 6,308,163), (hereinafter *Du*) in view of *Lee*, (US Publication No. 2005/0055694), (hereinafter *Lee*). This rejection is respectfully traversed.

In rejecting independent claims 1, 13, and 25, the Examiner states:

> As to claim 1, Du discloses a method for logically provisioning resources in a data processing system, said method comprising the steps of:
> receiving a request for a set of resources in a plurality of resources in a provisioning environment with the data processing system (column 9, lines 23-34, and Fig. 8), wherein each resource in said set of resources is one of a plurality of different types of resources, wherein said plurality of different types of resources comprises hardware elements and software elements (column 11, lines 38-52, and Fig. 8);
> selecting a particular instance of a resource in said set of resources of said plurality of resources from a group of unassigned available resources of said plurality of different types of resources (column 10, lines 1-1 0, an available resource is selected from a group of resources);
> indicating the status of said selected particular instance, wherein said selected particular instance is unavailable for selection (column 7, lines 29-36);
> logically provisioning said selected particular instance to fulfill the request by establishing logical relationships between said selected particular instance and other resources (column 1 2, lines 46-63);
> associating a state variable with the each one of said plurality of resources, wherein the state variable indicates whether the each one of said plurality of resources is available or reserved (column 7, lines 29-42, LRM keep track of the availability of individual resources and a state variable indicating such is inherent); and

responsive to logically provisioning said selected particular instance to fulfill the request, indicating whether the each one of said plurality of resources is reserved utilizing said state variable, wherein a reserved resource has an established logical relationship with said provisioning environment (column 7, lines 29-42, LRM keep track of the availability of individual resources and therefore responsive to the provisioning disclosed in column 12, lines 46-63 the indication of whether the resource is available will be changed).

But, Du does not explicitly disclose indicating that said selected particular instance is in the process of being reserved, wherein said selected particular instance is unavailable for selection after indicating the particular instance is being reserved, and further the state variable additionally indicating whether each one of said plurality of resources is being reserved. Du teaching however is functionally the same due to the fact that when Du's resources are being reserved they will be unavailable for selection; Du just does not explicitly disclose indicating that a resource is "in the process of being reserved."

However, Lee discloses a method for logically provisioning resources in a data processing system (Abstract) including resources indicating that a particular instance of a resource is in the process of being reserved ([0069], lines 1-8, "an indicator showing whether the corresponding resource has any requests pending," i.e. it is in the process of being reserved), wherein said selected particular instance is unavailable for selection after indicating the particular instance is being reserved ([0069], lines 1-10, if there is an indication of pending requests, the instant request will not be processed), and further a state variable additionally indicating whether each one of said plurality of resources is being reserved ([0069], lines 1-8, "an indicator showing whether the corresponding resource has any requests pending").

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Du and Lee in order to give more specific status indicators to resources so as to give any users or programs more information when interacting with Du's system.

As to claims 13 and 25, they are rejected by the same rationale set forth in claim 1's rejection.

Office Action dated August 22, 2008, pages 3-5.

Amended claim 1 reads as follows:

1.   A method for logically provisioning resources in a data processing system, said method comprising the steps of:
        receiving a request for a set of resources in a plurality of resources in a provisioning environment within the data processing system, wherein each resource in said set of resources is one of a plurality of different types of resources, wherein said plurality of different types of resources comprises hardware elements and software elements;
        associating a current state variable and a shared state variable with each one of said plurality of resources, wherein the current state variable indicates whether the each one of said plurality of resources is available, *in a process of being reserved,* or reserved, and wherein the shared state variable indicates whether the each one of said plurality of resources is a shared resource;
        selecting a particular instance of a resource in said set of resources of said plurality of resources from a group of unassigned available resources of said plurality of different types of resources;

indicating that said selected particular instance is *in the process of being reserved* utilizing the current state variable, wherein said selected particular instance is unavailable for selection after indicating that said selected particular instance is *in the process of being reserved*, wherein said selected particular instance is unavailable for selection by another request prior to provisioning said selected particular instance, and wherein a selection is prevented of any of said plurality of resources having an indication of in *the process of being reserved*;

logically provisioning said selected particular instance to fulfill the request by establishing logical relationships between said selected particular instance and other resources; and

responsive to logically provisioning said selected particular instance to fulfill the request, indicating whether the each one of said plurality of resources is reserved utilizing the current state variable, wherein a reserved resource has an established logical relationship with said provisioning environment and said reserved resource is not a shared resource. (emphasis added)

The Examiner bears the burden of establishing a *prima facie* case of obviousness based on the prior art when rejecting claims under 35 U.S.C. § 103. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992). For an invention to be *prima facie* obvious, the prior art must teach or suggest all claim limitations. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

As amended, *Du* and *Lee*, taken alone or in combination, do not teach or suggest "associating a current state variable and a shared state variable with each one of said plurality of resources, wherein the current state variable indicates whether the each one of said plurality of resources is available, in a process of being reserved, or reserved, and wherein the shared state variable indicates whether the each one of said plurality of resources is a shared resource," as recited in independent claim 1. Additionally, *Du* and *Lee*, taken alone or in combination, do not teach or suggest "indicating that said selected particular instance is in the process of being reserved utilizing the current state variable, wherein said selected particular instance is unavailable for selection after indicating that said selected particular instance is in the process of being reserved, wherein said selected particular instance is unavailable for selection by another request prior to provisioning said selected particular instance, and wherein a selection is prevented of any of said plurality of resources having an indication of in the process of being reserved," as recited in independent claim 1. In addition, *Du* and *Lee*, taken alone or in combination, do not teach or suggest that "responsive to logically provisioning said selected particular instance to fulfill the request, indicating whether the each one of said plurality of

resources is reserved utilizing the current state variable, wherein a reserved resource has an established logical relationship with said provisioning environment and said reserved resource is not a shared resource," as recited in independent claim 1. Therefore, the Examiner has not established a *prima facie* case of obviousness based on the prior art when rejecting claim 1.

Du is directed to a method and a system for providing resource management in workflow processing of an enterprise. *Du's* method and system include a multi-level resource manager hierarchy. An upper level includes at least one resource manager having data that represents an enterprise-wide view of resource capabilities. A subordinate second level of resource managers provides partial views of the resource capabilities of the enterprise. These partial views may be based upon organizational or physical boundaries. At a lowermost level of resource managers are local resource managers (LRMs) that include data to track individual resources. Above this lowermost level, the resource managers in the hierarchy track the resources based upon types of resources. Thus, a second level resource manager is configured to be aware of availability of a resource type, but not the availability of an individual resource. Also above the lowermost level, the resource managers are configured to exchange requests for the resources using a number of different messages. A Plead message is used to send a request to a higher level manager. On the other hand, a Delegate message is used to send a request to a lower level manager. A Refer message allows a request to be sent horizontally. Report messages are sent among resource managers to allow updates of cache entries regarding capabilities of other resource managers. *Du* does not teach or suggest "associating a current state variable and a shared state variable with each one of said plurality of resources, wherein the current state variable indicates whether the each one of said plurality of resources is available, in a process of being reserved, or reserved, and wherein the shared state variable indicates whether the each one of said plurality of resources is a shared resource," as recited in amended claim 1. In addition, *Du* does not teach or suggest "indicating that said selected particular instance is in the process of being reserved utilizing the current state variable, wherein said selected particular instance is unavailable for selection after indicating that said selected particular instance is in the process of being reserved, wherein said selected particular instance is unavailable for selection by another request prior to provisioning said selected particular instance, and wherein a selection is prevented of any of said plurality of resources having an indication of in the process of being reserved," as recited in amended claim 1. Additionally, *Du* does not teach or suggest that "responsive to logically

provisioning said selected particular instance to fulfill the request, indicating whether the each one of said plurality of resources is reserved utilizing the current state variable, wherein a reserved resource has an established logical relationship with said provisioning environment and said reserved resource is not a shared resource," as recited in amended claim 1. In addition, *Lee* does not provide for the deficiencies of *Du*. Thus, *Du* and *Lee*, taken alone or in combination, do not teach or suggest these features.

The Office Action refers to the following portions of *Du* in the rejection of claim 1:

> The third tier **42** includes LRMs **54, 56, 58, 60** and **62**. Each LRM is dedicated to a group of resources. In the preferred embodiment, the WFMS **36** utilizes a resource model that is a hierarchical collection of resource types. A resource type is used to organize resources into groups of resource instances having the same capabilities. The individual LRMs have information regarding and full control over the resources that they manage. The LRMs include individual resource databases which keep track of static information such as roles and addresses, as well as dynamic status information such as availability and workload. The LRM for a selected group maps the group into individual resources and checks their availability and workloads. When a request is received from an SRM **46-52**, an available resource is selected by the receiving LRM. The selected resource is then informed or invoked to perform the work item specified in the request.

Du, column 7, lines 26-42.

> In the decision step **156** of **FIG. 6**, the determination is made as to whether a resource is available to satisfy the request. As previously noted, the preferred embodiment is one in which LRMs are aware of the availability of particular resources. The information available at the SRM level relates to the capacity of resource types. That is, an SRM has the necessary dynamic information to determine whether a particular group of resources having the same capability is available, but the overhead required to maintain information for each resource within the group is avoided.

Du, column 10, lines 1-10.

> In order to enable flexible resource specification in process definition, each ERM **44** and SRM **46-52** also contains knowledge of roles. Roles are logical representations of resource requirements for workflow activities in terms of capabilities. Roles are used by activity definers (when creating new activities) to map activities into resources. Roles may be a boolean expression specifying the resource types needed for the activity. Given this information, the resource manager automatically generates virtual nodes, such as the nodes that are shown as being shaded in **FIG. 9**, which is the resource hierarchy **194** of **FIG. 8**, but with the hierarchy extended with roles. For example, assume that the activity definer defines two roles R_1 and R_2 for activities A_1 and A_2 as follows: A_1 :{Role:R_1 ={Peripheral and Software}} A_2 :{Role:R_2 ={(Programmer and Analyst) and (Computer or Secretary)}}

Du, column 12, lines 46-63.

These portions of *Du* disclose that a local resource manager (LRM) is dedicated to managing a group of resources. LRMs are aware of the availability of particular resources. An

LRM selects an available resource to perform a work item specified in a request. Each enterprise global resource manager **44** and site global resource manager **46-52** contains knowledge of roles. Roles are logical representations of resource requirements for workflow activities in terms of capabilities. *Du* does not teach or suggest "associating a current state variable and a shared state variable with each one of said plurality of resources, wherein the current state variable indicates whether the each one of said plurality of resources is available, in a process of being reserved, or reserved, and wherein the shared state variable indicates whether the each one of said plurality of resources is a shared resource," as recited in amended claim 1. In addition, *Du* does not teach or suggest "indicating that said selected particular instance is in the process of being reserved utilizing the current state variable, wherein said selected particular instance is unavailable for selection after indicating that said selected particular instance is in the process of being reserved, wherein said selected particular instance is unavailable for selection by another request prior to provisioning said selected particular instance, and wherein a selection is prevented of any of said plurality of resources having an indication of in the process of being reserved," as recited in amended claim 1. Additionally, *Du* does not teach or suggest that "responsive to logically provisioning said selected particular instance to fulfill the request, indicating whether the each one of said plurality of resources is reserved utilizing the current state variable, wherein a reserved resource has an established logical relationship with said provisioning environment and said reserved resource is not a shared resource," as recited in amended claim 1.

The Office Action states that *Du* does not explicitly disclose indicating that said selected particular instance is in the process of being reserved, wherein said selected particular instance is unavailable for selection after indicating the particular instance is being reserved, and further the state variable additionally indicating whether each one of said plurality of resources is being reserved. The Examiner alleges that *Du's* teaching is functionally the same due to the alleged fact that when *Du's* resources are being reserved they will be unavailable for selection. Applicants respectfully disagree. In the cited portion, *Du* checks if a resource is available and assigns a work item to the resource. *Du* does not mention reserving a resource. In addition, *Du* does not mention problems associated with two requests trying to reserve and provision a same resource that is not shared.

Lee is directed to a method, a system, and a computer readable medium embodying a computer program with code for dynamic load balancing resource allocation. A desired

allocation of resources is received for servicing a plurality of consumer group requests and determining an actual allocation of the resources for a present operational period. A temporary allocation of the resources for a next operational period relative to the desired allocation and the actual allocation is determined and tile resources allocated to the consumer group requests in the next operational period according to the temporary allocation. Consumer group requests to be serviced by the resources are selected based upon availability of the consumer group requests and the amount of consumer group requests being presently serviced. *Lee* does not teach or suggest "associating a current state variable and a shared state variable with each one of said plurality of resources, wherein the current state variable indicates whether the each one of said plurality of resources is available, in a process of being reserved, or reserved, and wherein the shared state variable indicates whether the each one of said plurality of resources is a shared resource," as recited in amended claim 1. In addition, *Lee* does not teach or suggest "indicating that said selected particular instance is in the process of being reserved utilizing the current state variable, wherein said selected particular instance is unavailable for selection after indicating that said selected particular instance is in the process of being reserved, wherein said selected particular instance is unavailable for selection by another request prior to provisioning said selected particular instance, and wherein a selection is prevented of any of said plurality of resources having an indication of in the process of being reserved," as recited in amended claim 1. Additionally, *Lee* does not teach or suggest that "responsive to logically provisioning said selected particular instance to fulfill the request, indicating whether the each one of said plurality of resources is reserved utilizing the current state variable, wherein a reserved resource has an established logical relationship with said provisioning environment and said reserved resource is not a shared resource," as recited in amended claims 1. In addition, *Du* does not provide for the deficiencies of *Lee*. Thus, *Du* and *Lee*, taken alone or in combination, do not teach or suggest these features.

The Office Action refers to the following portions of *Lee* in the rejection of claims 1:

[0069] Alternatively, a request arbitrator 16 may be completion interrupt driven. In this example, a completion interrupt refers to the interrupt given to the arbitrator 16 when a request servicing queue, one of the 17a, 1 7b, . . . 17y, has become empty. Within the arbitrator, each data structure representing a resource or resource producer is marked with an indicator showing whether the corresponding resource has any requests pending in the request servicing queue. If there are none and the request arbitrator 16 processes a consumer request for that particular resource, the arbitrator 16 queues such request to the corresponding request servicing queue. In the same processing, using the consumers to

resources binding table, the arbitrator 16 may also find consumers that are bound to such resource and search in those corresponding consumer group request queues for all matching consumer requests that can be queued on the same request servicing queue and prepare them for being serviced. It then queues a completion interrupt at the end of the queue so that such interrupt can be given when all the requests in the request servicing queued are serviced and the queue becomes empty again. If on the other hand, there are requests outstanding on the request servicing queue, then the new incoming requests would stay in its consumer regroup request queue, and wait for the pending requests to be serviced and the request queue to become emptied, before getting queued onto the corresponding request servicing queue. Upon the reception of a request servicing queue's completion interrupt, the request arbitrator 16 searches for all, or depending on available buffering resources, LIP to a certain amount of, consumer requests that have the correct binding, queues them onto the request servicing queue and terminates the queue with a completion interrupt. The arbitrator either queues all the submitted consumer requests or queues the requests until the request servicing queue is full. With such approach, the arbitrator 16 only needs to keep track of the consumers to resources binding but doesn't need to know whether a certain consumer has outstanding requests queued on a request servicing queue or not. As a result, whenever the arbitrator 16 is processing a completion interrupt, it can break the corresponding existing consumer to resource bindings and re-establish new ones if needed..

Lee, page 7, paragraph [0069].

This portion of *Lee* discloses that each data structure representing a resource is marked with an indicator showing whether the corresponding resource has any requests pending in the request servicing queue. An arbitrator either queues all the submitted consumer requests or queues the requests until the request servicing queue is full using a consumers to resources binding table. *Lee* does not teach or suggest "associating a current state variable and a shared state variable with each one of said plurality of resources, wherein the current state variable indicates whether the each one of said plurality of resources is available, in a process of being reserved, or reserved, and wherein the shared state variable indicates whether the each one of said plurality of resources is a shared resource," as recited in amended claim 1. In addition, *Lee* does not teach or suggest "indicating that said selected particular instance is in the process of being reserved utilizing the current state variable, wherein said selected particular instance is unavailable for selection after indicating that said selected particular instance is in the process of being reserved, wherein said selected particular instance is unavailable for selection by another request prior to provisioning said selected particular instance, and wherein a selection is prevented of any of said plurality of resources having an indication of in the process of being reserved," as recited in amended claim 1. Additionally, *Lee* does not teach or suggest that "responsive to logically provisioning said selected particular instance to fulfill the request,

indicating whether the each one of said plurality of resources is reserved utilizing the current state variable, wherein a reserved resource has an established logical relationship with said provisioning environment and said reserved resource is not a shared resource," as recited in amended claims 1. *Lee* does not mention reserving a resource. To the contrary, *Lee* teaches that a resource may have multiple pending requests in a servicing queue for processing. In addition, *Du* does not provide for the deficiencies of *Lee*. Thus, *Du* and *Lee*, taken alone or in combination, do not teach or suggest these features.

Du and *Lee* fail to teach or suggest "associating a current state variable and a shared state variable with each one of said plurality of resources, wherein the current state variable indicates whether the each one of said plurality of resources is available, in a process of being reserved, or reserved, and wherein the shared state variable indicates whether the each one of said plurality of resources is a shared resource," as recited in independent claim 1. In addition, *Du* and *Lee* fail to teach or suggest "indicating that said selected particular instance is in the process of being reserved utilizing the current state variable, wherein said selected particular instance is unavailable for selection after indicating that said selected particular instance is in the process of being reserved, wherein said selected particular instance is unavailable for selection by another request prior to provisioning said selected particular instance, and wherein a selection is prevented of any of said plurality of resources having an indication of in the process of being reserved," as recited in amended independent claim 1. Further, *Du* and *Lee* fail to teach or suggest that "responsive to logically provisioning said selected particular instance to fulfill the request, indicating whether the each one of said plurality of resources is reserved utilizing the current state variable, wherein a reserved resource has an established logical relationship with said provisioning environment and said reserved resource is not a shared resource," as recited in amended claim 1. Therefore, the alleged combination of *Du* and *Lee* does not teach or suggest these features.

In view of the above, the Examiner has not established a *prima facie* case of obviousness based on the prior art when rejecting claim 1. Thus, Applicants respectfully request withdrawal of the rejection of claim 1 under 35 U.S.C. § 103(a). In addition, *Du* and *Lee*, taken alone or in combination, do not teach or suggest the features of dependent claims 2-3, 5, and 9-12 at least by virtue of their dependency on claim 1. Claims 6, 13-15, 17-18, 21-27, 29-30, and 33-36 are

canceled. Therefore, Applicants respectfully request withdrawal of the rejection of claims 2-3, 5-6, 9-15, 17-18, 21-27, 29-30, and 33-36 under 35 U.S.C. § 103(a).

II.   35 U.S.C. § 103, Obviousness

The Examiner has rejected claims 37-39 under 35 U.S.C. § 103(a) as being unpatentable over *Du* in view of *Lee* as applied to the parent claims above in further view of what was well known in the art at the time of the invention. This rejection is respectfully traversed.

Since claims 37 depends from independent claim 1, the same distinctions between *Du*, *Lee*, and the invention recited in claim 1 apply to dependent claim 37. Claims 38 and 39 are canceled. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 37, 38, and 39 under 35 U.S.C. § 103(a).

III.   Conclusion

It is respectfully urged that the subject application is patentable over the cited art and is now in condition for allowance.

The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

DATE: November 24, 2008

Respectfully submitted,

/Gerald H. Glanzman/

Gerald H. Glanzman
Reg. No. 25,035
Yee & Associates, P.C.
P.O. Box 802333
Dallas, TX 75380
(972) 385-8777
Attorney for Applicants

GHG/VJA